

A NEW VARIETY OF ERIOGONUM UMBELLATUM FROM SOUTHERN NEVADA

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In a series of *Eriogonum* specimens received for study from the Nevada Test Site in the fall of 1967 I discovered a local population of *E. umbellatum* Torr. which seemed to represent an undescribed variety in this exceedingly complex species. During the growing season of 1968, I had an opportunity to work on the Test Site and study this population in the field. The original suspicions that it was undescribed were confirmed, and the new variety is now proposed as:

Eriogonum umbellatum Torr. var. *vernum* Reveal, var. nov.
A var. *dichrocephalo* Gandg. differt perianthiis straminum vel luteus, (5-) 6-9 (-10) mm. longis, foliis var. *subarido* S. Stokes simulans, subglabris vel glabris, viridis. A var. *umbellato* differt statura major. plantis usque ad 0.6 (-0.9) m. altis et 0.9 (-1.3) m. latis, tholiformis.

Dome-shaped perennial shrubs 0.3-0.6 (-0.9) m. high and 0.3-0.9 (-1.3) m. across from highly branched, brown, woody caudices, these often making up more than half the plants' height; leaves whorled, restricted to the tips of elongated sterile shoots and the base of flowering stems, the leaf-blades elliptic, acutish, broadest near the middle or slightly above the middle, 1-2.5 cm. long, (3-) 5-9 mm. wide, slightly thickened along the margins in some, sparsely pubescent on both surfaces in early anthesis becoming less pubescent above during anthesis until nearly or totally glabrous on both surfaces in fruit; petioles \pm narrowly winged, pubescent or glabrous depending upon the time of anthesis, up to 15 mm. long; flowering stems (5-) 8-15 cm. long, sparsely white floccose in early anthesis becoming glabrous and bright green during anthesis and early fruiting except for the very base, maturing brownish, the stems stout and somewhat rigid; bracts foliaceous, up to 1.5 cm. long, similar to the leaves only more reduced and sessile, usually reflexed; inflorescences up to 6 (-10) cm. long, 3-, mostly 4- to 5-rayed, the rays sparsely and thinly floccose becoming glabrous during anthesis in most, spreading; involucre campanulate, the tube 1.5-2.5 mm. long, the lobes 2-3 mm. long, reflexed, sparsely floccose, the numerous flowers long exerted on glabrous pedicels; perianth pale to bright yellow, (5-) 6-9 (-10) mm. long including the stipe, glabrous, the outer whorl of segments 4-6 mm. long, 2.5-5 mm. wide, broadly elliptical, the inner whorl of segments 5-8 mm. long, 3-4.5 mm. wide, spatulate; stamens included, becoming exerted during anthesis when the calyx-segments

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greenish, or yellowish-brown, 3.5-5 mm. long, distinctly 3-angled nearly the entire length; embryo green, straight.

TYPE.— NEVADA: Nye Co., Nevada Test Site, common in soils derived from light-colored volcanic rocks near the Yucca Flat - Forty-Mile Canyon drainage divide at the N end of Shoshone Mtn. along the Buckboard Mesa (or Tippipah Spring) Road, 0.3 mi. E of the divide and ca. 1 mi. W of Tippipah Spring, elevation 5450 feet, 4 June 1968, *James L. Reveal 1139*. Holotype deposited at UTC. Isotypes distributed to ARIZ, BRY, CAS, DS, GH, MO, NTS³, NY, RSA, UC, US, UT, and other herbaria.

DISTRIBUTION.— Known only from near volcanic rock outcrops along the foothills of desert ranges from Shoshone Mtn. N to the S end of the Monitor Range, 5200-6500 feet elevation. Nye Co., Nevada. Flowering from May to early June.

SPECIMENS EXAMINED.— NEVADA: Nye Co., Cat Canyon, Timber Mtn., *Beatley & Bostick 5021* (BRY, NTS, NY, UTC), the ochroleucous-flowered form, *5023* (BRY, NTS, NY, UTC), the yellow-flowered form; canyon W of Tippipah Point, Shoshone Mtn., *Beatley 4533* (BRY, NTS); 1.5 mi. W of the Yucca Flat - Forty Mile Canyon drainage divide, N Shoshone Mtn., *Beatley 5666, 5667, 5668* (BRY, NTS); 28.5 mi. E of Tonopah, 5 mi. E of the Salisbury Flat turnoff, S. Monitor Range, *Reveal & Beatley 1118* (BRY, CAS, GH, NTS, NY, UC, US, UTC); near the top of Tippipah Point, Shoshone Mtn., *Reveal 1144* (BRY, CAS, NTS, NY, UC, US, UTC); White Blotch Springs, *Reveal 1351* (BRY, CAS, GH, MO, NTS, NY, RSA, UC, US, UTC); SE of Shoshone Peak, ca. 2.5 mi. SW of Mine Mtn. Junction, *Reveal 1380* (BRY, CAS, GH, NTS, NY, UC, US, UTC); Tippipah Spring, *Richards s.n.* (BRY).

The recognition of any new taxon in the *Eriogonum umbellatum* complex must be approached with considerable caution. Not only are the numerous varieties difficult to distinguish in some localities, there has not been a comprehensive review of the complex published as of yet. Over the last few years I have been able to study several of the critical type specimens and have been able to see many of the varieties in the field so that it is now possible to recognize over twenty-five different varieties in the species. While many problems remain to be solved, it is possible to recognize and describe the obviously distinct forms without the fear of having them already circumscribed under another name.

The various forms in the *Eriogonum umbellatum* complex in southern Nevada are rather distinctive and not normally subject to the kind of confusion one usually finds in this species, as in the Pacific Northwest for example. The large, spreading subshrubs with compound inflorescences and subglabrous leaves are called var. *subaridum* S. Stokes, while the forms of lower stature with more yellowish to reddish flowers with a tan midrib are known as var. *dichrocephalum* Gandg. (formerly known in the literature as var. *aridum* (Greene) C. L. Hitchc.). Those plants with reddish-brown to pink flowers having large reddish or purple midribs are called

3. NTS is used here to designate the Nevada Test Site Herbarium, Mercury, Nevada 89023.

var. *versicolor* S. Stokes. All of these plants normally flower from late June or early July through late September. The var. *vernum*, as the name implies, flowers in the spring of the year from May to early June. Likewise, none of these southern Nevada varieties has flowers as long as those found in var. *vernum*.

The var. *vernum* exhibits several interesting morphological features which are variously found in other forms of this species. The highly branched woody caudices are similar to the form of var. *umbellatum* typically seen along the eastern slopes of the Sierra Nevada and thus the plants are much more erect and woody than the low matted Rocky Mountain populations of var. *umbellatum*. The leaves of var. *vernum* are similar to those of var. *subaridum*, changing in the degree of pubescence as the growing season progresses. The large flower size is similar to that of vars. *polyanthum* (Benth. in DC.) M. E. Jones and *speciosum* (Drew) S. Stokes of northern California, but otherwise var. *vernum* is not closely related. Unlike most varieties, the new variety has two distinct and seemingly not intergrading color forms—one with bright sulfur-yellow flowers and the other with pale-yellow or ochroleucous flowers. In Cat Canyon, on the eastern side of Timber Mountain, the two grow together with the pale-flowered form much more common than the yellow-flowered form. On Shoshone Mountain, only the pale-yellow form has been found, as is the case for the White Blotch Springs population to the north. On the southern end of the Monitor Range, however, only the bright yellow-flowered form was found. The flowers of the pale-colored form are less persistent in fruit than those with the yellow color; in late June, most of the flowers have fallen from the plants in the first case while in the latter case, the yellow flowers containing mature fruit can still be found on the plants.

Of the various taxa in the species, the var. *vernum* is probably most closely related to var. *dichrocephalum*. In general, var. *dichrocephalum* on the Nevada Test Site (and elsewhere in its range) occurs at a higher elevation than var. *vernum*, but some plants in otherwise large populations of var. *dichrocephalum* have been seen in early anthesis in mid-June, and completely flowering plants are not uncommon in late June and early July. Thus, with the few common morphological features shared plus this characteristic of early flowering, it is possible to suggest this relationship.